

2008 International Orthotropic Bridge Conference

LRFD HIGHWAY BRIDGE DESIGN WORKSHOP

DATE

Friday, August 29, 2008

TIME

8:00 AM – 5:00 PM

OBJECTIVE

The purpose of this workshop is to provide bridge engineers the fundamentals of LRFD for highway bridge design in California. The course will begin with an overview and introduction to AASHTO LRFD Bridge Design Specifications (4th Edition, 2007) and California Amendments, including the limits states design philosophy, the load and load combinations. The design provisions for concrete and steel girder bridges will then be reviewed and illustrated with detailed design examples with step-by-step explanations.

WORKSHOP OUTLINE

- Introduction to AASHTO-LRFD Bridge Design Specifications 4th Edition and California Amendments
 - Limit States Design Philosophy
 - Loads and Load Combinations
- LRFD Concrete Bridge Design
 - Flexure Design - Unified Theory and Provisions
 - Shear Design - Sectional Method
 - Prestressed Concrete Bridge LRFD Considerations
 - Prestressed Concrete Box Girder Bridge Design Example
- LRFD Steel Bridge Design
 - Flexure Design
 - Shear Design
 - Fatigue Design
 - Steel Plate Girder Bridge Design Example

WHO SHOULD ATTEND

- Bridge Design Engineers (with or without knowledge of LRFD)
- Senior Managers/Project Managers
- Bridge Owners
- Transportation Policy Makers and Decision Makers
- Program Managers Responsible for Implementing Capital and Maintenance Programs
- Other Bridge Engineering Professionals
- Engineers Interested in Learning about the latest in LRFD for Bridges

INSTRUCTORS

Susan E. Hida, S.E., P.E. has over 20 years of experience in bridge and structural engineering. Ms. Hida chairs the AASHTO T5 Bridge Technical Committee on Loads and Load Distribution, is a member of the AASHTO T10 Bridge Technical Committee on Concrete, and has served as a panel member on numerous NCHRP panels. As a senior bridge engineer and technical specialist for the California Department of Transportation, she has written amendments to the *AASHTO Load and Resistance Factor Design Bridge Specifications*, chaired the Caltrans Loads Committee, served on the LRFD Executive Committee, and

spoken at numerous training events. The ASCE Bridge Journal recently published her article, "Statistical Significance of Less Common Load Combinations". She received her BSCE and MSCE in structure design from Purdue University and an MSE University in structure mechanics from Princeton, and is a registered civil-structural engineer in Oregon and registered Professional Engineer in California.

Rodney Simmons, P.E., has over 16 years of experience in structural engineering related to bridge design, construction and maintenance. Mr. Simmons is a Senior Project Engineer for the California Department of Transportation. He has involved in many bridge design projects including seismic retrofit design of San Francisco-Oakland Bay Bridge West Spans. He is Project Engineer on the Angels Camp Bypass project on Route 4 in Calaveras County. He received his Master of Science and Bachelor of Science degrees in Civil Engineering from California State University, Sacramento.

Jim Ma, P.E. has over 20 years of experience in bridge engineering and is a Senior Bridge Engineer and Prestressed Concrete Specialist for California Department of Transportation (Caltrans). Mr. Ma's responsibilities with Caltrans include developing and recommending bridge design policies, methods, and procedures as well as updating and interpreting bridge engineering standards, specifications, memos and manuals. Mr. Ma taught Caltrans Bridge Design Academy for many years. Prior to Caltrans, he worked as a Senior Bridge Engineer for Imbsen & Associates, Inc. Mr. Ma has involved in many bridge design and construction projects such as the Golden Gate Bridge Seismic Retrofit Project, Benicia Martinez Seismic Retrofit Project, and Tennessee I-40 Bridge Project. Currently, Mr. Ma serves on two review panels for the National Cooperative Highway Research Program and also teaches at California State University, Sacramento. Mr. Ma received his Master Degree in Civil Engineering from the State University of New York at Buffalo.

Lian Duan, Ph.D., P.E. has over 25 years of experience in structural and bridge engineering. He is a Senior Bridge Engineer and Structural Steel Committee Chair with the California Department of Transportation. He taught the steel bridge design class in the Caltrans Bridge Design Academy. He was lead engineer for the development of Caltrans *Guide Specifications for Seismic Design of Steel Bridges*. He authored or coauthored more than 70 technical papers and reports. He is co-editor of the Bridge Engineering Handbook, (CRC Press, 2000), winner of a Choice magazine's Outstanding Academic Title award for 2000. He received the prestigious 2001 Arthur M. Wellington Prize from the American Society of Civil Engineers (ASCE) for the paper, "*Section Properties for Latticed Members of San Francisco-Oakland Bay Bridge*", *Journal of Bridge Engineering*, May 2000. " He currently serves a Transportation Research Board (TRB) Steel Committee member and National Highway Cooperative Research Program (NCHRP) Panel member. He received his B.S. in Civil Engineering and M.S. in Structural Engineering from Taiyuan University of Technology and Ph.D. in Structural Engineering from Purdue University.